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Records of the Genera *Hypomecis*, *Cleora* and *Alcis* (Geometridae; Ennominae) from Thailand, with Descriptions of Three New Species and One New Subspecies*

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Abstract Thirty-four Thai species of the genera *Hypomecis*, *Cleora* and *Alcis* are recorded. *Hypomecis stueningi*, *H. moriutii* and *Alcis chiangmaiensis* and *Cleora venustaria thaiensis* are described as new to science.

Key words *Hypomecis*, *Cleora*, *Alcis*, records and descriptions, Thailand.

A large number of Ennomine specimens, belonging to the genus *Hypomecis* HÜBENER and its allies, were collected in Thailand by the members of the Lepidopterological Expeditions of the University of Osaka Prefecture to Thailand in 1981, 1983, 1985 and 1987, and by Dr. M. OWADA, one of the members of the Overseas Scientific Research project of the National Science Museum in 1987. All the specimens belonging to *Hypomecis* and its allies were submitted to me for the taxonomic study. Besides, I examined a small collection of the Zoological Museum, Copenhagen, collected by Mr. Ole KARSHOLT and his colleagues in 1984, and some material donated to me by Mr. S. SAITO in 1987.

Here are enumerated 34 species of *Hypomecis*, *Cleora* and *Alcis*, including three new species and one new subspecies, as the first part of my reports. The detailed accounts of the Lepidopterological Expeditions of the University of Osaka Prefecture to Thailand were given by KUROKO & MORIUTI (1987) and MORIUTI (1989). The species recorded for the first time from Thailand are indicated with an asterisk after species name.

Abbreviations. Collectors. HK: Hiroshi KUROKO. SM: Sigeru MORIUTI. TS: Tosihisa SAITO. YA: Yutaka ARITA. YY: Yutaka YOSHIYASU. MO: Mamoru OWADA. The location of the specimens. BMNH: British Museum (Natural History), London. NSMT: National Science Museum, Tokyo. UOP: Entomological Laboratory, University of Osaka Prefecture, Sakai, Japan. ZMC: Zoological Museum, Copenhagen, Denmark. RS: R. SATO.

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Hypomecis HÜBNER, [1821]

The members of *Hypomecis* are widely distributed in the Indo-Malayan and Palaearctic regions, but no species has hitherto been recorded from Thailand. In this paper 11 species are added to the Thai fauna, two of them being described as new to science.

Hypomecis transcissa (WALKER)*

Boarmia transcissa WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 380.
Serraca transcissa: MOORE, [1887], *Lepid. Ceylon* **3**: 416, pl. 190: 3, 3a.
Hypomecis transcissa: SATO, 1988, *Heteroc. sumatr.* **2**: 129.
Boarmia lineataria WALKER, 1866, *List Specimens lepid. Insects Colln Br. Mus.* **35**: 1585
Chogada latipennis BUTLER, 1881, *Illust. typical Specimens Lepid. Heterocera Colln Br. Mus.* **5**: 103, pl. 136: 2.
Boarmia ratotaria SWINHOE, 1894, *Trans. ent. Soc. Lond.* **1894**: 216, pl. 2: 18.

Specimens examined. Chaiyaphum, Chulabhorn Dam, ca 700 m, 1 ♂ 1 ♀, 14 viii. 1987(SM, TS, YA, YY). Nakhon Nayok, Khao Yai ca 800 m , 1 ♂, 7. viii. 1981, 3 ♂, 25. viii. 1981 (HK, SM, YA, YY), 2 ♂, 11-19. xi. 1985 (SM, TS, YA), 1 ♂, 7. viii. 1987, 3 ♂, 8. vii. 1987, 2 ♂, 24-25. viii. 1987, 1 ♂ 2 ♀, 21. ix. 1987 (SM, TS, YA, YY). Phitsanulok, Tong Salaeng Luang, ca 550 m, 1 ♂, 24-25. viii. 1987 (MO).

Remarks. The male genitalia of this species were illustrated by SATO (1990: 262), together with those of some allied species from Indonesia.

Hypomecis infixaria (WALKER)*, **comb. nov.** (Figs. 1 & 2)

Boarmia infixaria WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 379.

Specimens examined. Chiang Mai, Doi Pui, ca 1300 m, 1 ♂, 1-4. ix. 1987 (SM, TS, YA, YY). Loei, Phu Rua, ca 800 m, 1 ♂, 15-19. viii. 1987 (SM, TS, YA, YY). Kanchanaburi, Erawan, 1 ♂, 19. viii. 1981 (HK, SM, YA, YY).

Remarks. The male genitalia (Fig. 18) are very similar to those of *transcissa*, but different as follows. Medial part of gnathos larger, a pair of processes on tegumen extending well beyond apex of uncus, two toothed bands on vesica nearly equal in length, while in *transcissa* one band is half the length of the other.

Hypomecis lioptilaria (SWINHOE)*

Boarmia lioptilaria SWINHOE, 1903, *Fasc. malayenses.* **1**: 91.
Hypomecis lioptilaria: SATO, 1988, *Heteroc. sumatr.* **2**: 129.
Boarmia uoptilaria (misspelling): HOLLOWAY, 1976, *Moths of Borneo with special Reference to Mount Kinabalu*: 82.

Specimens examined. Chiang Mai, Doi Suthep, ca 600 m, 1 ♀, 20. v. 1983 (HK,

SM, YA, YY), 2 ♂, 8-10. vii. 1966 (H. INOUE), 2 ♂, 26. iv. 1987, 1 ♂, 1. v. 1987 (S. & A. SAITO); Doi Pui, ca 1300 m, 3 ♂, 26-27. x. 1985 (HK, SM, TS, YA); Doi Chang Khian, 2 ♂, 21. vii. 1981 (HK, SM, YA, YY); Doi Inthanon, Maeo Khun Klang, ca 1300 m, 16-17. x. 1983 (MO). Chaiyaphum, Chulabhorn Dam, ca 700 m, 1 ♂, 14. viii. 1987 (SM, TS, YA, YY). Nakhon Nayok, Khao Yai, ca 800 m, 3 ♂, 25. viii. 1981 (HK, SM, YA, YY), 1 ♂, 15. vi. 1983 (HK, SM, YA, YY), 9 ♂, 11-19. xi. 1985 (SM, TS, YA), 2 ♂, 7. viii. 1987, 1 ♂, 8. viii. 1987, 1 ♂ 1 ♀, 22. ix. 1987, 2 ♂ 1 ♀, 23. ix. 1987, 1 ♂, 24. ix. 1987 (SM, TS, YA, YY). Petchabun, Lom Sak, Nam Nao, ca 800 m, 1 ♂, 18-19. viii. 1987 (MO). Chanthaburi, Khao Soi Dao, ca 400 m, 1 ♀, 24-25. viii. 1987 (SM, TS, YA, YY); Khitchagut, ca 500 m, 1 ♂, 5. x. 1985 (HK, SM, TS, YA).

Hypomecis procursaria (WALKER)*, **comb. nov.**

Boarmia procursaria WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 375.

Specimen examined. Kanchanaburi, Erawan, 1 ♂, 19. viii. 1981 (HK, SN, YA, YY).

Remarks. Male genitalia as shown in Fig. 20. Tegumen with a pair of short processes; medial plate of gnathos almost rectangular, much longer than width; a row of short spines on vesica.

Hypomecis costaria (GUENÉE)*

Boarmia costaria GUENÉE, 1857, *in* BOISDUVAL & GUENÉE, *Hist. nat. Insectes* (Lépid.) **9**: 242.
Hypomecis costaria: SATO, 1988, *Heteroc. sumatr.* **2**: 242.
Boarmia xylopterata SNELLEN, 1895, *Dt. ent. Z. Iris* **5**: 148.

Specimens examined. Nakhon Nayok, Khao Yai, ca 800 m, 3 ♂ 1 ♀, 11-19. xi. 1985 (SM, TS, YA), 2 ♂, 7. viii. 1987, 1 ♀, 8. viii. 1987, 1 ♀, 9. viii. 1987; 1 ♂, 21 ix. 1987 (SM, TS, YA, YY). Petchabum, Lom Sak, Nam Nao, ca 800 m, 1 ♂, 18-19. viii. 1987 (MO). Surat Thani, Phanom, Khao Sok Natn. Pk., ca 100 m, 4 ♂ 10-11. viii. 1987 (MO).

Hypomecis subdetractaria subdetractaria (PROUT)*

Boarmia subdetractaria PROUT, 1923, *Novit. zool.* **30**: 211 (replacement name).
Boarmia detractaria Walker, 1866, *List Specimens lepid. Insects Colln Br. Mus.* **35**: 385 (nom. praeocc., nec Walker, 1860: 357).
Hypomecis subdetractaria: SATO, 1988, *Heteroc. sumatr.* **2**: 130.

Specimen examined. Ranong, Kapur, Khlong Nakha, ca 50 m, 1 ♂, 12-13. viii. 1987 (MO).

Remarks. The subspecies *sulawesensis* was described from Sulawesi by SATO (1990).

Hypomecis cineracea (MOORE)*

Astacuda cineracea MOORE, 1888, *in* HEWITSON & MOORE, *Descr. new Indian lepid. Insects colln late Mr W. S. ATKINSON* : 244.
Boarmia cineracea : HOLLOWAY, 1976, *Moths of Borneo with special Reference to Mount Kinabalu* : 82.
Hypomecis cineracea : SATO, 1988, *Heteroc. sumatr.* **2** : 129.
Alcis decrepitata WILEMAN, 1911, *Entomologist* **44** : 344. **Syn. nov.**

Specimens examined. Chiang Mai, Doi Suthep, 2 ♂, 26. iv. 1987 (S. & A. SAITO) ; Fang, 1 ♂, 29-31. x. 1985 (HK, SM, TS, YA) ; Doi Chang Khian, ca 1250 m, 1 ♂, 29. v. 1983 (HK, SM, YA, YY) ; Doi Pui, ca 1300 m, 3 ♂, 26-27. x. 1985 (HK, SM, TS, YA). Nakhon Nayok, Khao Yai, ca 800 m, 2 ♂, 14. vi. 1983, 4 ♂, 15. vi. 1983 (HK, SM, YA, YY), 6 ♂, 11-19. xi. 1985 (SM, TS, YA), 2 ♂ 2 ♀, 7. viii. 1987, 2 ♂, 8. viii. 1987, 1 ♂, 9. viii. 1987, 2 ♂, 21. ix. 1987, 3 ♂ 1 ♀, 22. ix. 1987, 1 ♂, 24. ix. 1987 (SM, TS, YA, YY). Chanthaburi, Khao Soi Dao, ca 400 m, 1 ♂, 24-25. viii. 1987 (SM, TS, YA, YY).

Remarks. *Alcis decrepitata* WILEMAN was described on the basis of one male collected from Kanshirei (=Kuantyling, Tainan Hsien) in Taiwan. My examination of the holotype and its genitalia has shown that *decrepitata* is conspecific with *H. cineracea* (MOORE). Specimens of Taiwan examined as follows. Holotype of *decrepitata*. ♂, labelled, "Kanshirei, Formosa, 1000 ft, 29. iv. 1908, A. E. Wileman/Type/Alcis decrepitata sp. n., Type, ♂/795a/Wileman Coll., B.M. 1929-261/Geometridae slide, No. 6095", BMNH. Other material. Taipei Hsien, Urai, ♂, 2-4. v. 1973 (M. YAMAMOTO) ; Kaohsiung Hsien, Shanping, ca 750 m, 1 ♂, 6-7. iii. 1987 (K. NAKANO) ; Tengchih, ca 1600 m, 1 ♂ 1 ♀, 3. xi. 1987 (WEN LUNG CHEN), RS.

Hypomecis nepalensis (HAMPSON)*, **comb. nov.** (Figs. 3 & 4)

Medasina nepalensis HAMPSON, 1902, *J. Bombay nat. Hist. Soc.* **14** : 509.
Dryocoetis cineracea, ab. *subalbida* WARREN, 1896, *Novit. zool.* **3** : 403 (unavailable).

Specimen examined. Chiang Mai, Doi Inthanon Nat. Park, ca 1600 m, 1 ♂, 22-24. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN), ZMC.

Remarks. *Subalbida* was described from several specimens of paler aberrant form of *cineracea* taken at Khasias simultaneously with the ordinary form. Therefore the name "*subalbida*" has no status by the Code of Zoological Nomenclature. This species is distinguished from *cineracea* by the following characteristics. Male antennal pecten a little longer, wings without greyish tint, irrorated with brown, lines broader, and underside much paler. In male genitalia (Figs. 21 & 22), uncus shorter, tegumen with a pair of small triangular projections, valva broader at middle, with ampulla and harpe bearing longer spines.

Hypomecis stueningi sp. nov. (Figs. 5 & 6)

Length of forewing ♂ 30 mm. Similar to *nepalensis*, but separable from it as follows. Both wings dark brown, more densely irrorate with black ; lines black, more

clearly defined. Underside of wings white, faintly hued with yellow; subterminal band-like black shade more sharply defined, and parallel with outer margin of wings; discocellular spot larger, roundish, wholly black. Female unknown.

Male genitalia (Figs. 23 & 24). Very similar to those of *nepalensis*. A pair of processes on tegumen more developed, twice as long as wide; median plate of gnathos broader; cornuti composed of two rows of short spines, a dentate plate and a stick-like process as in *nepalensis*, the last being shorter without serrate side.

Holotype. ♂. Thailand, Chiang Mai, Doi Inthanon Nat. Park, ca 1600 m, 22-24. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN), ZMC.

Remarks. The name of this species is dedicated to Dr. Dieter STÜNING, who kindly gave me a lot of useful information on the Thai *Hypomecis*.

Hypomecis moriutii sp. nov. (Figs. 7-9)

Length of forewing. ♂ 22-25 mm, ♀ 25-26 mm. Tegula, patagia, abdomen and thoracic vestiture greyish brown; labial palpus brown. Male antenna bipectinate, the longest pecten about 10 times as long as the length of the segment, apical one-fourth non-pectinated; female antenna simple. Legs grey; hind tibia without hair-pencil. Forewing: 12-veined, R_1 and R_2 very shortly stalked; greyish brown; medial area between antemedial and postmedial lines lighter than rest of wing; lines black, ill-defined, antemedial line gently excurved, postmedial line medially excurved beyond discocellular spot, enlarged into black band near inner margin; subterminal line crenulate; discocellular spot black, a short streak, sometimes vanished. Hind wing similar, but antemedial line wanting and medial band-like line present; postmedial line more strongly crenulate. Underside: grey with broad and dark distal band, leaving pale rectangular mark at apex of forewing; lines black, broader than on upperside, antemedial line wanting, postmedial line on forewing started from black costal spot, less excurved on forewing, less crenulate on hindwing; discocellular spot larger.

Male genitalia (Figs. 25 & 26). Similar to those of *nepalensis* and *stueningi*. Tegumen without any processes on each side posteriorly. Median plate of gnathos as wide as base of tegumen, with a rounded apex. Valva slenderer, tapering towards apex. Harpe less developed, with fewer spines. Cornuti composed of a row of many short spines, a small plate and a stick-like long process serrate at one side as in *nepalensis*.

Female genitalia (Fig. 27). Sterigma with sclerotized, elliptical median area. Colliculum developed. Bursa copulatrix slender, posterior third ribbed and lightly scrlotized, and the remainder membranous, with a very small signum.

Holotype. ♂. Thailand, Petchabun, Lom Sak, Nam Nao, ca 800 m, 18-19. viii. 1987 (MO), NSMT. Paratypes. 3 ♂ 2 ♀. 1 ♂, same data as holotype, NSMT; 1 ♂ 1 ♀, Chiang Mai, Doi Inthanon, Maeo Khun Klang, ca 1300 m, 16-17. x. 1983 (MO), RS; 1 ♂, Doi Pui, ca 1300 m, 26-27. x. 1985 (HK, SM, TS, YA), UOP; 1 ♀, Doi Pakia, ca 1500 m, 24. v. 1983 (HK, SM, YA, YY), UOP.

Remarks. The specific name is dedicated to Dr. Sigeru MORIUTI, who is one of the leaders of the UOP Lepidopterological Expedition to Thailand.

Hypomecis separata (WALKER)*, **comb. nov.** (Fig. 10)

Boarmia separata WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 381.
Pseudangerona separata: MOORE, [1887], *Lepid. Ceylon* **3**: 414.
Boarmia retractaria WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 386.
Boarmia intectaria WALKER, 1862, *List Specimens lepid. Insects Colln Br. Mus.* **26**: 1535.

Specimens examined. Chaiyaphum, Chulabhorn Dam. ca 700 m, 1 ♂, 14. viii. 1987 (SM, TS, YA, YY). Nakhon Nayok, Khao Yai, ca 800 m, 1 ♂, 25. viii. 1981 (HK, SM, YA, YY), 1 ♂, 14. vi. 1983 (HK, SM, YA, YY), 1 ♂, 11-19. xi. 1985 (HK, SM, TS, YA), 1 ♂ 2 ♀, 7. viii. 1987, 1 ♂, 8. viii. 1987, 2 ♂, 23. ix. 1987, 2 ♂, 24. ix. 1987 (SM, TS, YA, YY). Chanthaburi, Khao Soi Dao, ca 400 m, 2 ♂, 7-8. x. 1985 (HK, SM, TS, YA). Phitsanulok, Tong Salaeng Luang, ca 550 m, 1 ♂, 24-25. viii. 1987 (MO). Phuket, Nam Tok Ton Sai, ca 300 m, 17-18. x. 1985 (HK, SM, TS, YA). Nakhon Si Thammarat, Tha Sala Nop Pitam, Khao Luang Natn. Pk. H. Q., ca 120 m, 2 ♂, 6, 9. viii. 1987 (MO); Tha Sala Kra Raw, Kan Leong, Khao Luang Natn. Pk., ca 650 m, 1 ♂, 7-8. viii. 1987 (MO). Surat Thani, Phanom Khao Sok Natn. Pk., ca 100 m, 1 ♂, 10-11. viii. 1987 (MO).

Remarks. The genus *Pseudangerona* was established for this species by MOORE ([1887]: 413). This species is a typical member of *Hypomecis*, because the male antennal pectens are fully scaled dorsally, the veins R_1 and R_2 on forewing short-stalked in male and the R_2 is coincident with R_1 in female, and the male and female genitalia (Figs. 19 & 28) are of the ordinary type of *Hypomecis*. Therefore *Pseudangerona* MOORE, [1887], should be a junior subjective synonym of *Hypomecis* (**syn. nov.**).

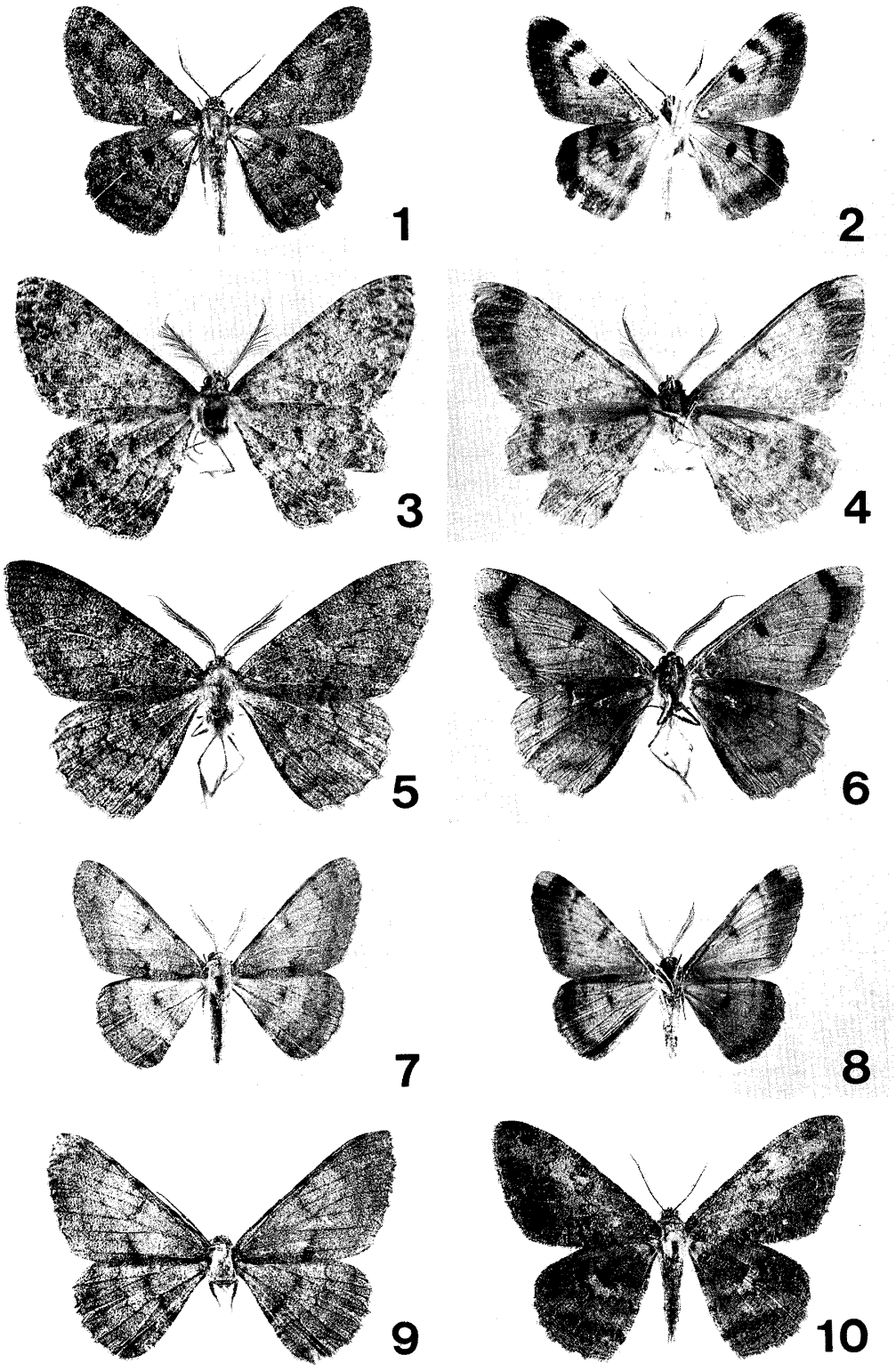
Cleora CURTIS, 1825

In Thailand the genus *Cleora* CURTIS, 1825, has been represented by seven species. In this paper I will record 14 species with a description of one new subspecies.

Cleora alienaria (WALKER)

Boarmia alienaria WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 370.
Cleora alienaria: PROUT, 1929, *Bull. Hill Mus. Witley* **3**: 189, pl. 5: 4 (♂-genitalia).

Specimens examined. Chiang Mai, Fang, 3♂1♀, 18. vii. 1981 (HK, SM, YA, YY); Doi Pakia, ca 1500 m, 1♀, 5-7. ix. 1987 (SM, TS, YA, YY); Doi Pui, ca 1300 m, 1♂, 26-27. x. 1985 (HK, SM, TS, YA), 1♂, 1-4. ix. 1987 (SM, TS, YA, YY); Doi Pui, Phu Phing Palace, ca 1400 m, 1♂, 7-9. ix. 1987 (MO); Doi Inthanon, Mae Kland, ca 1300 m, 1♂, 8-12. ix. 1987 (SM, TS, YA, YY); Doi Suthep, ca 1200 m, 1♂, 23. x. 1983 (MO); Doi Chang Khian, ca 1250 m, 1♂1♀, 25. x. 1985 (HK, SM, TS, YA), Loei, Phu Rua, Natn. Pk., ca 1200 m, 1♂, 21. viii. 1987 (MO); Phu Luang Wildlife Sanctuary, ca



Figs. 1-10. *Hypomecis* spp. 1. *H. infixaria* (WALKER). ♂. 2. *Ditto*, underside. 3. *H. nepalensis* (HAMPSON). ♂. 4. *Ditto*, underside. 5. *H. stueningi* sp. nov. ♂, holotype. 6. *Ditto*, underside. 7. *H. moriutii* sp. nov. ♂, holotype. 8. *Ditto*, underside. 9. *Ditto*, ♀, paratype. 10. *H. separata* (WALKER). ♂.

700-900 m, 1♂1♀, 8-14. x. 1984 (MO). Nakhon Nayok, Khao Yai, ca 800 m, 1♂, 26. viii. 1981 (HK, SM, YA, YY), 2♀, 14. vi. 1983, 3♂, 15. vi. 1983 (HK, SM, YA, YY), 3♂ 1♀, 11-19. xi. 1985 (SM, TS, YA), 1♀, 10. viii. 1987 (SM, TS, YA, YY). Nakhon Si Thammarat, Tha Sala, Kra Raw, Kan Leong, Khao Luang Natn. Pk, ca 650 m, 1♂ 1♀, 7-8. viii. 1987 (MO). Kanchanaburi, Tham Than Lot, ca 800 m, 1♂, 21. viii. 1981 (HK, SM, YA, YY), 1♂, 22-24. xi. 1985 (SM, TS, YA). Chanthaburi, Khao Soi Dao, ca 400 m, 7♂ 1♀, 24-25. viii. 1987 (SM, TS, YA, YY). Ranong, Na Kha, ca 250 m, 1♀, 15. x. 1985 (HK, SM, TS, YA); Kapur, Khlong Nakha, ca 50 m, 1♀, 12-13. viii. 1987 (MO).

Cleora fraterna (MOORE)

Chogada fraterna MOORE, 1888, *in* HEWITSON & MOORE, *Descr. new Indian lepid. Insects Colln late Mr W. S. ATKINSON* : 245.
Cleora fraterna : PROUT, 1929, *Bull. Hill Mus. Witley* **3** : 192, pl. 5 : 5 (♂-genitalia).

Specimens examined. Chiang Mai, Doi Inthanon, Maeo Khun Klang, ca 1300 m, 2♂ 1♀, 16-17. x. 1983 (MO), 1♂, 8-12. ix. 1987 (SM, TS, YA, YY); Doi Inthanon, South Ridge, ca 1650 m, 1♂, 18-21. x. 1983 (MO); Doi Pakia, ca 1500 m, 1♀, 23. vii. 1981 (HK, SM, YA, YY), 6♂ 2♀, 5-7. ix. 1987 (SM, TS, YA, YY); Doi Pui, Phu Phing Palace, ca 1400 m, 4♂, 7-9. ix. 1987 (MO); Doi Suthep, 1♂, 24. vii. 1981 (HK, SM, YA, YY). Chaiyaphum, Chulabhorn Dam, ca 700 m, 1♂, 14. viii. 1987 (SM, TS, YA, YY). Chanthaburi, Khao Soi Dao, ca 400 m, 1♂, 24-25. viii. 1987 (SM, TS, YA, YY).

Remarks. *Boarmia acaciaria* BOISD. recorded by TAMS (1924 : 273) from Me Song and Bangkok in Thailand probably belongs to the present species.

Cleora determinata (WALKER)*

Boarmia determinata WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21** : 384.
Cleora determinata : PROUT, 1929, *Bull. Hill Mus. Witley* **3** : 200, pl. 6 : 13 (♂-genitalia).

Specimens examined. Nakhon Si Thammarat, Tha Sala, Kra Raw, Kan Leong, Khao Luang Natn. Pk., ca 650 m, 1♂, 7-8. viii. 1987 (MO). Surat Thani, Phanom, Khao Sok Natn. Pk., ca 100 m, 1♂, 10-11. viii. 1987 (MO).

Cleora decisaria (WALKER)

Boarmia decisaria WALKER, 1866, *List Specimens lepid. Insects Colln Br. Mus.* **35** : 1589.
Cleora decisaria : PROUT, 1928, *Insects Samoa* **3** (3) : 157, 161, text-fig. 2A (♂-genitalia); Prout, 1929, *Bull. Hill Mus. Witley* **3** : 205, pl. 6 : 21 (♂-genitalia).

Specimens examined. Chiang Mai, Pakia, 1♂, 23. vii. 1981 (HK, SM, YA, YY). Chanthaburi, Khao Soi Dao, ca 400 m, 1♂, 24-25. viii. 1987 (SM, TS, YA, YY).

Cleora injectaria (WALKER)

Boarmia injectaria WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **31**: 376
Cleora injectaria: PROUT, 1929, *Bull. Hill Mus. Witley* **3**: 210, pl. 7: 26 (♂-genitalia).

Specimens examined. Chanthaburi, Plew Chantaburi, 1 ♂, 10. viii. 1981 (HK, SM, YA, YY); Phliu, 1 ♂, 23 & 26. viii. 1987 (SM, TS, YA, YY). Nakhon Si Thammarat, Tha Sala, Kra Raw, Kan Leong, Khao Luang Natn. Pk., ca 650 m, 1 ♂, 7-8, viii. 1987 (MO).

Remarks. This species was recorded as a pest of mangrove, *Rhizophora candelaria* Dc (Rhizophoraceae), in Thailand ([Department of Agriculture, Royal Thai Goverment & U.S. Opert. Miss. Thailand], 1965: 87).

Cleora concentraria (SNELLEN)*

Boarmia concentraria SNELLEN, 1877, *Tijidschr. Ent.* **20**: 40, t. 3, fig. 20.
Cleora concentraria: PROUT, 1929, *Bull. Hill Mus. Witley* **3**: 209, pl. 7: 25 (♂-genitalia).

Specimens examined. Chiang Mai, Doi Pui, ca 1300 m, 1♀, 1-4. ix. 1987 (SM, TS, YA, YY); Doi Inthanon, Mae Klang, ca 1300 m, 1♂, 8-12. ix. 1987 (SM, TS, YA, YY). Nakhon Nayok, Khao Yai, ca 800 m, 1♂, 11-19. xi. 1985 (SM, TS, YA). Kanchanaburi, Tam Tarn Lod, 1 ♂, 21. viii. 1981 (HK, SM, YA, YY). Chanthaburi, Phliu, ca 100 m, 23 & 26. viii. 1987 (SM, TS, YA, YY).

Cleora venustaria thaiensis subsp. nov. (Fig. 11)

Boarmia venustaria LEECH, 1891, *Entomologist* **24**, suppl.: 44.
Alcis venustaria: INOUE, 1956, *Check List Lepid. Japan* **3**: 322.
Chogada venustaria: INOUE, 1959, *Icon. Het. Japon. Col. Nat.* **1**: 210, pl. 147: 2.
Cleora venustaria: FLETCHER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 112.

Length of forewing. ♂, 18 mm. Different from the nominate subspecies from Japan in a reduction of yellowish brown irroration of both sides of wings, which has much paler appearance. Female unknown.

Male genitalia (Fig. 29). Similar to the nominate subspecies, but the forked harpe is more strongly developed.

Holotype. ♂. Thailand, Chiang Mai, Doi Pakia, ca 150 m, 5-7. ix. 1987 (SM, TS, YA, YY), UOP.

Remarks. This species was described from Japan and later recorded from Korea by SHIN (1983). The Korean population has darker wings than the Japanese ones, but the shape of harpe shows it belongs to the nominate subspecies.

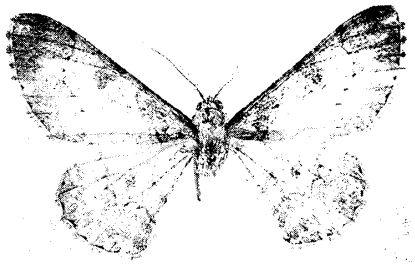


Fig. 11. *Cleora venustaria thaiensis* subsp. nov. ♂, holotype.

Cleora cucullata fusconebulata (FLETCHER)*

Carecomotis cucullata FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 105, pl. 3: 12, pl. 4: 37 (♂-genitalia).
Carecomotis cucullata fusconebulata FLETCHER, 1953, *Ann. Mag. nat Hist.* (12) **6**: 106.
Cleora cucullata fusconebulata: FLETCHER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 113.

Specimens examined. Chiang Mai, Doi Suthep, ca 600 m, 1 ♂, 24. vii. 1981 (HK, SM, YA, YY). Nakhon Nayok, Khao Yai, ca 800 m, 1 ♂, 15. vi. 1983 (HK, SM, YA, YY), 3 ♂, 11-19. xi. 1985, 1 ♂, 22-24. xi. 1985 (SM, TS, YA), 4 ♂ 2 ♀, 7. viii. 1987, 3 ♂, 8. viii. 1987, 1 ♀, 9. viii. 1987, 3 ♂ 1 ♀, 10. viii. 1987, 3 ♂, 22. ix. 1987, 1 ♂, 23. ix. 1987 (SM, TS, YA, YY), Khao Yai Nat. Park, ca 700 m, 1 ♀, 29. ix-6. x. 1984 (KARSHOLT, LOMBOLDT & NIELSEN), ZMC.

Remarks. The nominate race was described from Naga Hills, Assam.

Cleora onycha onycha (FLETCHER)*

Carecomotis onycha FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 63, 64 (♂-genitalia).
Cleora onycha onycha: FLETCHER, 1967, *Bull. Br. Mus nat. Hist.* (Ent.), suppl. 8: 133.

Specimens examined. Nakhon Nayok, Khao Yai, ca 800 m, 1 ♂, 15. vi. 1983 (HK, SM, YA, YY), 1 ♂, 11-19. xi. 1985 (SM, TS, YA), 1 ♂ 1 ♀, 7. viii. 1987, 4 ♂, 8. viii. 1987, 1 ♂ 1 ♀, 23. ix. 1987 (SM, TS, YA, YY).

Cleora repulsaria (WALKER)*

Boarmia repulsaria WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 374.
Carecomotis repulsaria: FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 118, pl. 3: 19, pl. 4: 39 (♂-genitalia).
Cleora repulsaria: FLETCHEER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 133.

Specimen examined. Chiang Mai, Doi Pui, ca 1300 m, 1 ♀, 26-27. x. 1985 (SM, TA, YA).

Cleora biclavata (FLETCHER)

Carecomotis biclavata FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 115, pl. 3: 1, pl. 4: 32 (♂-genitalia).
Cleora biclavata: FLETCHER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 113.

Specimen examined. Nakhon Si Thammarat, Tha Sala Kra Raw, Kan Leong, ca 650 m, Khao Luang Natn. Pk, 1 ♂, 7-8. viii. 1987 (MO).

Remarks. This species was described from Sumatra, but one male specimen taken in Thailand, lablelled "Siam, Nakon Sri Tamarata, Khao Ram", was designated as one of the paratypes (FLETCHER, 1953).

Cleora inoffensa glaucata (FLETCHER)*

Boarmia inoffensa SWINHOE, 1902, *Trans. ent. Soc. Lond.* **35**: 625.
Carecomotis inoffensa: FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 125, pl. 3: 16, pl. 4: 49 (♂-genitalia).
Carecomotis inoffensa glaucata FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 126.
Cleora inoffensa glaucata: FLETCHER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 113.

Specimens examined. Nakhon Nayok, Khao Yai ca 800 m, 1 ♂, 26. viii. 1981 (HK, SM, YA, YY), 1 ♂, 7. viii. 1987, 1 ♂, 23. ix. 1987, (SM, TS, YA, YY). Nakhon Si Thammarat, Tha Sala, Nop Pitam, Khao Luang Natn. Pk. H. Q., ca 120 m, 1 ♂, 6 & 9. viii. 1987 (MO).

Cleora pupillata pupillata (WALKER)

Boarmia pupillata WALKER, 1860, *List Specimens lepid. Insects Colln Br. Mus.* **21**: 491.
Carecomotis pupillata: FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 131, pl. 3: 13, pl. 4: 48 (♂-genitalia).
Cleora pupillata pupillata: FLETCHER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 113.

Specimens examined. Nakhon Nayok, Khao Yai, ca 800 m, 2 ♂, 15. vi. 1983, 1 ♂, 18. vi. 1983, 1 ♂, 19. vi. 1983 (HK, SM, YA, YY), 1 ♂, 7-8. x. 1985 (HK, SM, TS, YY), 2 ♂, 11-19. xi. 1985 (SM, TS, YA), 2 ♂, 7. viii. 1987, 1 ♂, 8. viii. 1987, 1 ♀, 10. viii. 1987, 2 ♂, 23. ix. 1987 (SM, TS, YA, YY). Chanthaburi, Phliu, ca 30 m, 1 ♀, 8. viii. 1987 (SM, TS, YA, YY). Phuket, Nam Tok Ton Sai, ca 300 m, 3 ♂, 17-18. x. 1985 (HK, SM, TS, YA).

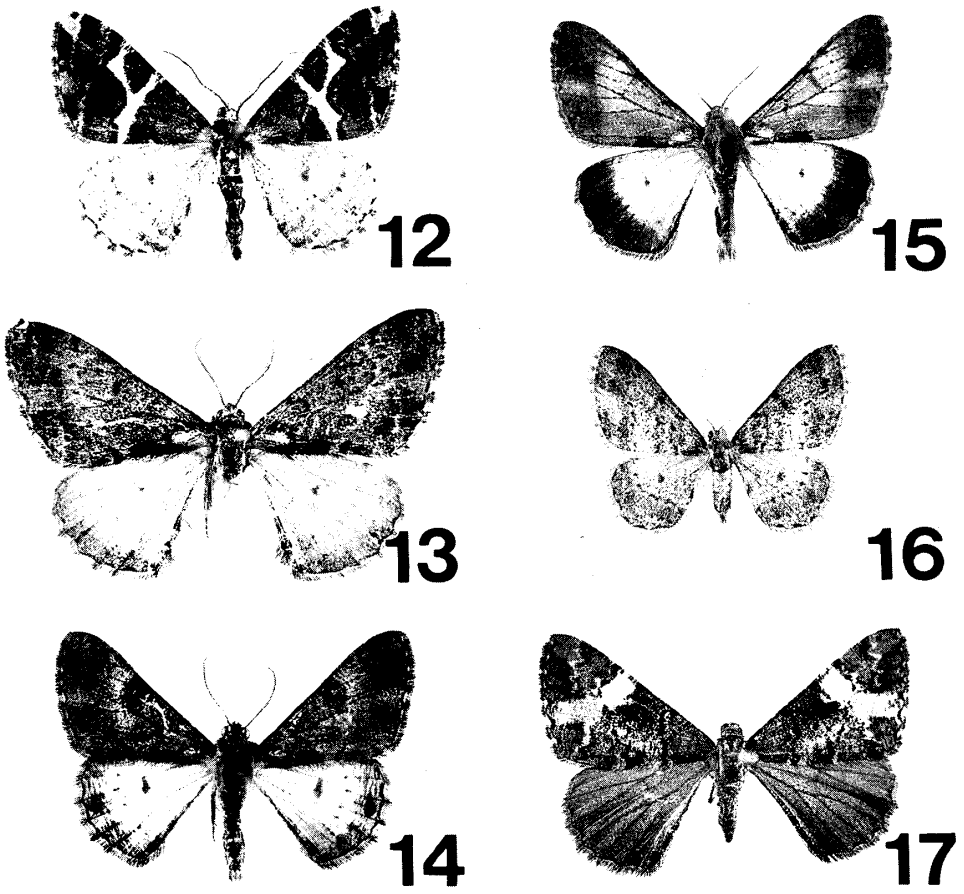
Cleora contiguata contiguata (MOORE)*

Boarmia contiguata MOORE, 1868, *Proc. zool. Soc. Lond.* **1867**: 631.
Carecomotis contiguata: FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 139, pl. 6: 69, 70 (♂-genitalia).
Cleora contiguata contiguata: FLETCHER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 113.

Specimens examined. Chiang Mai, Doi Pui, ca 1300 m, 1 ♀, 1-4. ix. 1987; Doi Pui, Phu Phing Palace, ca 1400 m, 1 ♂, 7-9. ix. 1987 (MO); Doi Pakia, ca 1500 m, 1 ♂, 5-7. ix. 1987 (SM, TS, YA, YY). Nakhon Nayok, Khao Yai, ca 800 m, 4♂, 25. viii. 1981 (HK, SM, YA, YY), 2♂, 18. vi. 1983, 1♂, 21. vi. 1983, (HK, SM, YA, YY), 1♂ 1♀, 11-19. xi. 1985 (SM, TS, YA), 4♂, 8. viii. 1987, 1♀, 10. viii. 1987, 5♂, 22. ix. 1987 (SM, TS, YA, YY). Kanchanaburi, Tham Than Lot, ca 800 m, 2 ♂, 22-24. xi. 1985 (SM, TS, YA). Chanthaburi, Khitchakut, ca 500 m, 5 ♂, 9. vi. 1983; Kaosoi Dao, ca 400 m, 14. viii. 1981 (HK, SM, YA, YY), 1 ♂, 7. vi. 1983 (HK, SM, YA, YY). Chen Dao, 1 ♂, 29. iv. 1987 (S. & A. SAITO).

Cleora contiguata brooksi (FLETCHER)

Carecomotis contiguata brooksi FLETCHER, 1953, *Ann. Mag. nat. Hist.* (12) **6**: 140, pl. 6: 75, 76 (♂-genitalia).



Figs. 12-17. *Alcis* spp. 12. *A. decussata* (MOORE). ♂. 13. *A. imbecilis* (MOORE). ♂. 14. *A. semialba* (MOORE). ♂. 15. *A. chiangmaiensis* sp. nov. ♂, holotype. 16. *A. aagostigma* (PROUT). ♀. 17. *A. albifera* (MOORE). ♀.

Cleora contiguata brooksi: FLETCHER, 1967, *Bull. Br. Mus. nat. Hist.* (Ent.), suppl. 8: 113.

Specimens examined. 2 ♂, Phuket, Nam Tok Ton Sat, ca 300 m, 17-18. x. 1985 (SM, TS, YA).

Remarks. FLETCHER (1953) recorded three males of *brooksi* taken at Nakon Sri Tamarat , Peninsular Thailand. Among my material, two males from Phuket Is. are *brooksi*, and the others are the nominate race. In Thailand *brooksi* seems to be restricted to the peninsular district and its neighboring islands.

Alcis CURTIS, 1826

Nine species are newly recorded from Thailand, including one new species described here.

Alcis decussata (MOORE)* (Fig. 12)

Cleora decussata MOORE, 1868, *Proc. zool. Soc. Lond.* **1867**: 628, pl. 33: 4.
Alcis decussata: INOUE, 1982, *Bull. Fac. domest. Sci. Otsuma Wom. Univ.* **18**: 181.

Specimens examined. Chiang Mai, Doi Pakia, ca 1500 m, 1 ♀, 5-7. ix. 1987 (SM, TS, YA, YY); Doi Pui, ca 1400 m, Phu Phing Palace, 1 ♂, 7-9. ix. 1987 (MO); Doi Suthep-Pui Nat. Park, Doi Pui, 1650 m, 1 ♂, 17-28. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN), ZMC; Doi Inthanon, South Ridge, ca 1650 m, 2 ♀, 18-21. x. 1983 (MO); Doi Inthanon, ca 2500 m, 2 ♂, 3-5. ix. 1987 (MO); Doi Inthanon, ca 2571 m. 1 ♂, 9. ix. 1987 (SM, TS, YA, YY).

Alcis semiclarata (WALKER)*, **comb. nov.**

Selidosema? *semiclarata* WALKER, 1862, *List Specimens lepid. Insects Colln Br. Mus.* **24**: 1029.
Boarmia semiclarata: HAMPSON, 1895, *Fauna Br. India* (Moths) **3**: 267.
Boarmia (*Alcis*) *semiclarata*: WEHRLI, 1943, *in* SEITZ, *Macrolepid. World* **4** (Suppl.): 513.
Scotosia quadrifera WALKER, 1866, *List Specimens lepid. Insects Colln Br. Mus.* **35**: 1687.

Specimens examined. Chiang Mai, Doi Inthanon Nat. Park, ca 2200-2500 m, 2 ♂ 2 ♀, 22-23. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN); Doi Inthanon, ca 1300 m, 1 ♀, 1 & 3. xi. 1985 (SM, TS, YA); Doi Inthanon, ca 2500 m, 4 ♂ 5 ♀, 3-5. ix. 1987 (MO); Doi Inthanon, ca 2571 m, 2 ♂ 3 ♀, 2. xi. 1985, 1 ♀, 8. ix. 1987, 4 ♂ 2 ♀, 9. ix. 1987, 1 ♂, 11. ix. 1987 (SM, TS, YA, YY).

Alcis imbecilis (MOORE)*, **comb. nov.** (Fig. 13)

Pseudocoremia imbecilis MOORE, 1888, *in* HEWITSON & MOORE, *Descr. new Indian lepid. Insects Colln late Mr W. S. ATKINSON*: 241.
Boarmia imbecilis: HAMPSON, 1895, *Fauna Br. India* (Moths) **3**: 267.

Specimens examined. Chiang Mai, Doi Inthanon, ca 2571 m, 4 ♂ 1 ♀, 22. v. 1983 (HK, SM, YA, YY).

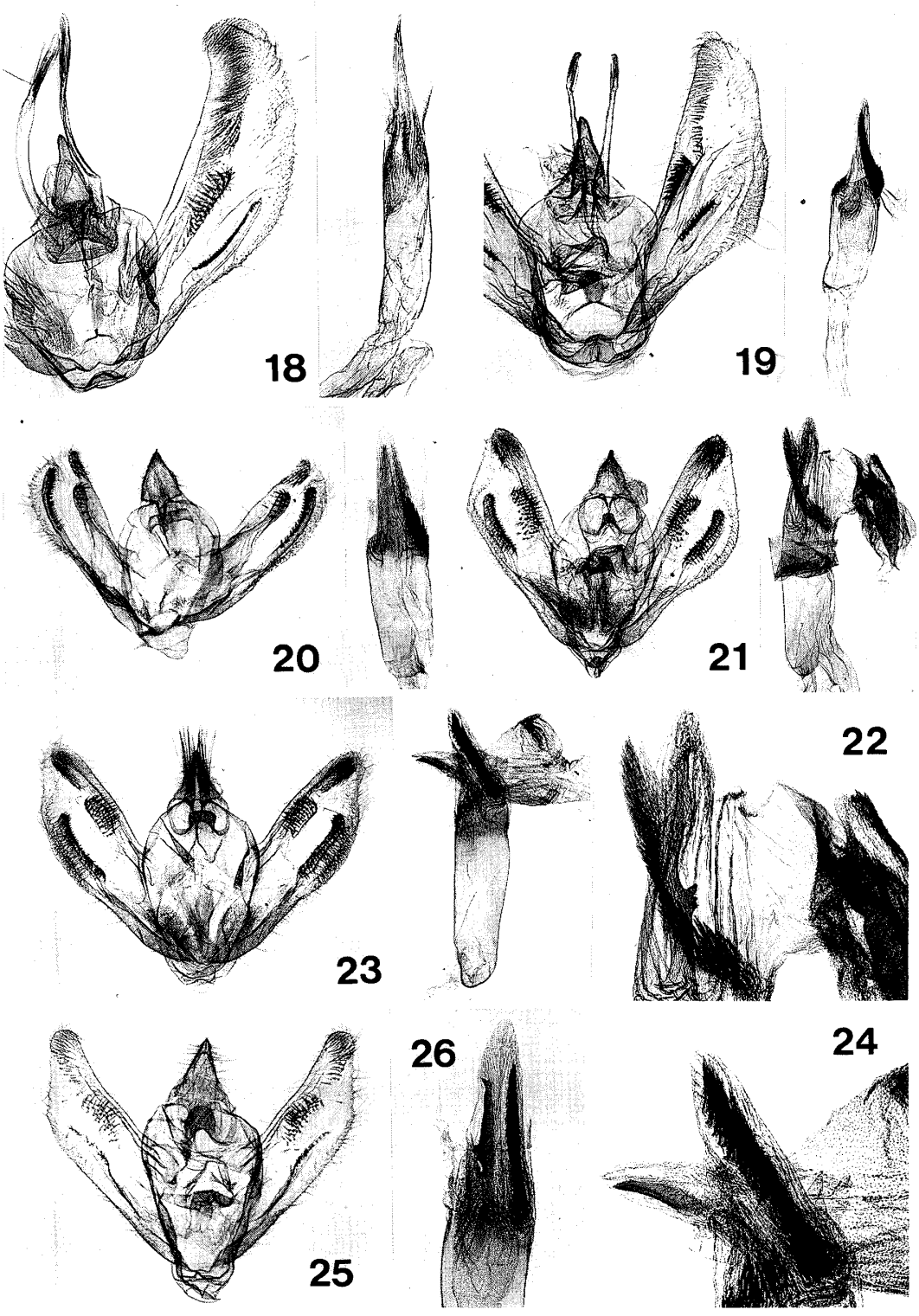
Alcis semialba (MOORE)*, **comb. nov.** (Fig. 14)

Pseudocoremia semialba MOORE, 1888, *in* HEWITSON & MOORE, *Descr. new Indian lepid. Insects Colln late Mr. W. S. ATKINSON*: 241.
Boarmia semialba: HAMPSON, 1895, *Fauna Br. India* (Moths) **3**: 266.

Specimens examined. Chiang Mai, Doi Inthanon, South Ridge, ca 1650 m, 4 ♂ 2 ♀, 18-21. x. 1983 (MO); Doi Inthanon Nat. Park, ca 1600 m, 2 ♂, 22-24. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN).

Alcis chiangmaiensis sp. nov. (Fig. 15)

Length of forewing. ♂ 16-17 mm. Forewing reddish brown; inner margin black



Figs. 18-26. Male genitalia of *Hypomecis* spp. 18. *H. infixaria* (WALKER). RS-2807. 19. *H. separata* (WALKER). RS-2805. 20. *H. procursaria* (WALKER). RS-3229. 21. *H. nepalensis* (HAMPSON). ZMC. 22. *Ditto*. Apical portion of vesica greatly magnified. 23. *H. stueningi* sp. nov. Holotype. ZMC. 24. *Ditto*. Apical portion of vesica greatly magnified. 25. *H. moriutii* sp. nov. RS-2806. 26. *Ditto*. Apical portion of vesica greatly magnified.

along basal half; antemedial line blackish, heavily marked at costa; postmedial line blackish, sinuous, marked with black on veins; in some specimens blackish brown band visible outside postmedial line; discocellular spot fuscous, linear. Hindwing whitish with broad fuscous marginal band; lines lacking; discocellular spot fuscous. Underside whitish; forewing with broad fuscous marginal band, enclosing a whitish spot between M_2 and M_3 and a fuscous discocellular spot; hindwing with markings similar to those of upper side. Female unknown.

Male genitalia (Fig. 30). Similar to those of *semialba*, but gnathos shorter, ampulla broader, paired processes of juxta incurved, and a horn-like cornutus longer.

Holotype. ♂. Thailand, Chiang Mai, Doi Pakia, ca 1500 m, 5-7. ix. 1987 (SM, TS, YA, YY), UOP. Paratypes. 10 ♂. Chiang Mai, Doi Pui, Phu Phing Palace, 1 ♂, 7-9. ix 1987 (MO), RS; Doi Pui, ca 1300 m, 1 ♂, 1-4. ix. 1987 (SM, TS, YA, YY), UOP; Doi Inthanon, Maeo Khun Klang, ca 1300 m, 4 ♂, 16-17. x. 1983 (MO), NSMT, 4 ♂, 8-12. ix. 1987 (SM, TS, YA, YY), UOP.

Remarks. This species is closely related to *semialba* and *imbecilis*, but easily distinguished from them by the reddish brown wings.

Alcis maculata prodictyota (WEHRLI)*

Arichanna maculata MOORE, 1868, *Proc. zool. Soc. Lond.* **1867**: 658.
Arichanna (*Dictyodea*) *prodictyota* WEHRLI, 1934, *Int. ent. Z.* **27**: 509.
Alcis maculata prodictyota: INOUE, 1987, *Bull. Fac. domest. Sci. Otsuma Wom. Univ.* **23**: 264.

Specimens examined. Chiang Mai, Doi Inthanon, South Ridge, ca 1650 m, 1 ♀, 18-21. x. 1983 (MO); Doi Inthanon, ca 2500 m, 3 ♂, 3-5. ix. 1987 (MO); Doi Inthanon, ca 2571 m, 1 ♂, 9. ix. 1987, 1 ♂ 1 ♀, 11. ix. 1987 (SM, TS, YA, YY).

Alcis aagostigma (PROUT)*, **comb. nov.** (Fig. 16)

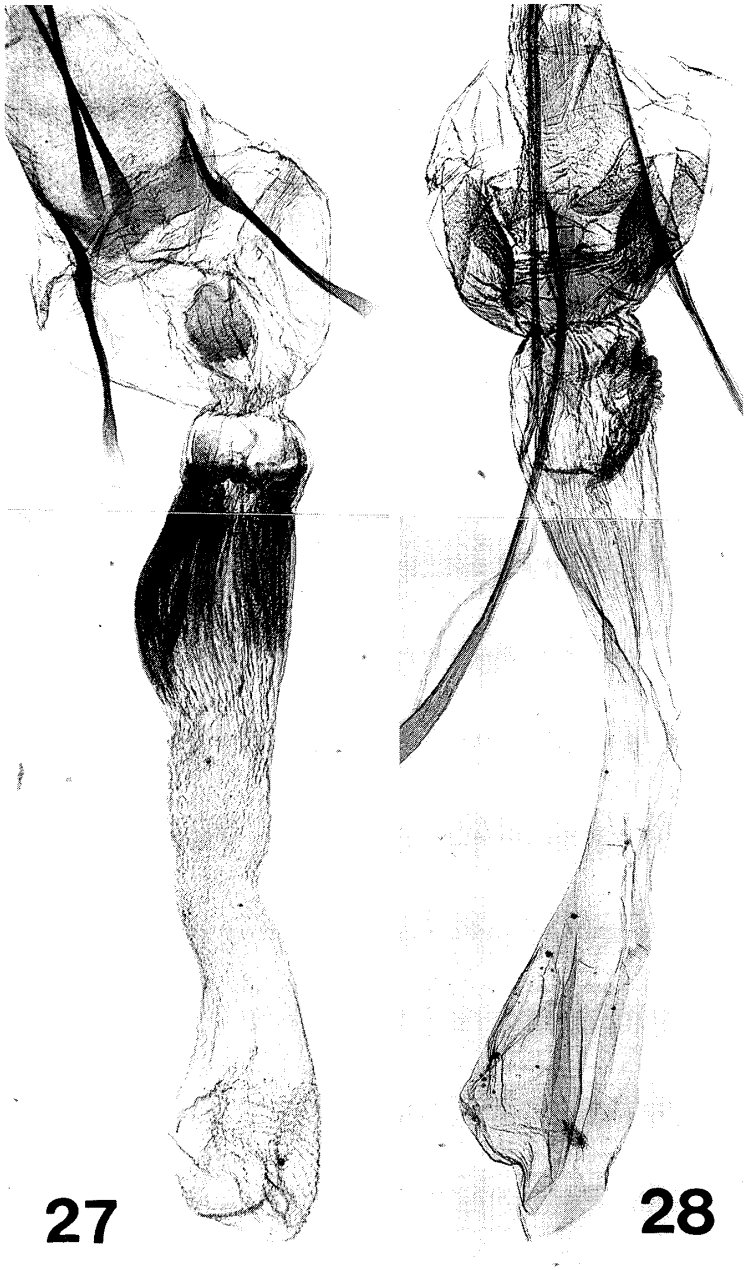
Cleora aagostigma PROUT, 1927, *J. Bombay nat. Hist. Soc.* **31**: 939.

Specimens examined. Chiang Mai, Doi Pakia, ca 1500 m, 2 ♂ 1 ♀, 5-7. ix. 1987 (SM, TS, YA, YY); Doi Pui, ca 1300 m, 2 ♂ 1 ♀, 1-4. ix. 1987 (SM, TS, YA, YY); Doi Suthep, 1100 m, 3 ♂ 1 ♀, 22-23. viii. 1990 (H. Inoue).

Alcis variegata (MOORE)*, **comb. nov.**

Pseudocoremia variegata MOORE, 1888, *in* HEWITSON & MOORE, *Descr. new Indian lepid. Insects Colln late Mr W. S. ATKINSON*: 240.
Cleora variegata: SWINHOE, 1891, *Trans. ent. Soc. Lond.* **1891**: 488.
Boarmia variegata: HAMPSON, 1895, *Fauna Br. India* (Moths) **3**: 266.

Specimens examined. Chiang Mai, Doi Pakia, ca 1500 m, 2♂, 5-7. ix. 1987 (SM, TS, YA, YY), Doi Inthanon, South Ridge, ca 1650 m, 2♂2♀, 18-21. x. 1983 (MO); Doi Inthanon Nat. Park, ca 1600 m, 2♂, 22-24. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN); Doi Inthanon, ca 2571 m, 1 ♀, 10. ix. 1987 (SM, TS, YA, YY); Doi Suthep-Pui

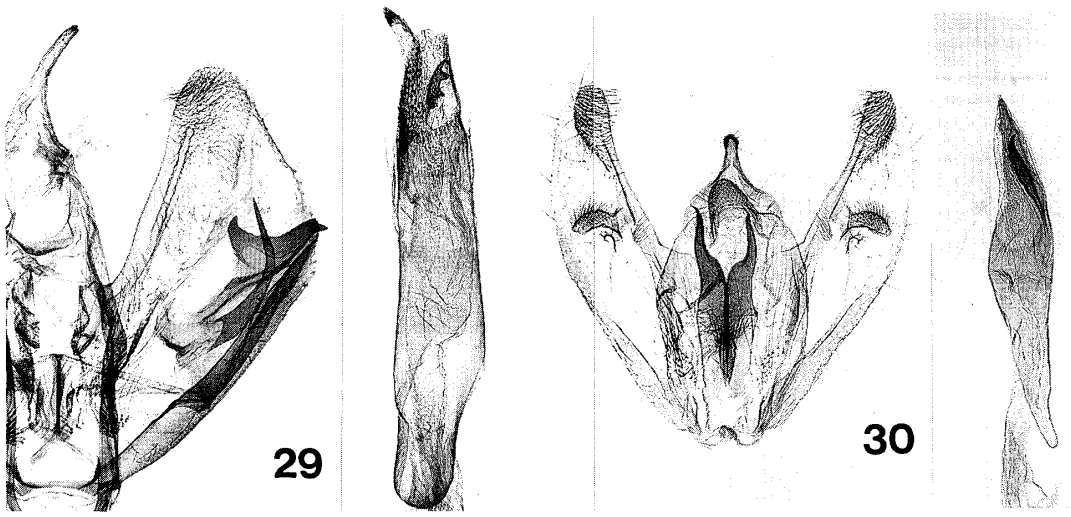


Figs. 27-28. Female genitalia of *Hypomecis* spp. 27. *H. moriutii* sp. nov. RS-3273. 28. *H. separata* (WALKER). RS-3371.

Nat. Park, Doi Pui, ca 1650 m, 2 ♂, 17-28. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN).

Alcis albifera (MOORE)* (Fig. 17)

Pseudocoremia albifera MOORE, 1888, *in* HEWITSON & MOORE, *Descr. new Indian lepid. Insects Colln late Mr W. S. ATKINSON* : 241.
Boarmia albifera : HAMPSON, 1895, *Fauna Br. India* (Moths) **3** : 271.
Boarmia (Alcis) albifera : WEHRLI, 1943, *in* SEITZ, *Macrolepid. World* **4** (Suppl.) : 510.



Figs. 29-30. Male genitalia. 29. *Cleora venustaria thaiensis* subsp. nov. UOP. 30. *Alcis chiangmaiensis* sp. nov. UOP.

Alcis albifera: INOUE, 1972, *Tinea* **9**: 236.

Specimens examined. Chiang Mai, Doi Inthanon, South Ridge, ca 1650 m, 1 ♀, 18-21. x. 1983 (MO); Doi Inthanon Nat. Park, ca 1600 m, 3 ♂ 1 ♀, 22-24. x. 1984 (KARSHOLT, LOMHOLDT & NIELSEN); Doi Inthanon, ca 1300 m, 1 ♀, 1 & 3. xi. 1985 (SM, TS, YA, YY).

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摘　　要

3新種・1新亜種を含むタイ国産 *Hypomecis*, *Cleora*, *Alcis* 属（シャクガ科；エダシャク亜科）の記録（佐藤力夫）

大阪府立大学（1981, 1983, 1985, 1987）と国立科学博物館（1987）によって実施されたタイ国の鱗翅類調査の資料を基に，他の材料も若干加え，確認できた全標本のデータを記録した．この3属は，いわゆるBoarmiiniの中では大属である．今後その他の属についても順次報告していきたい．

Hypomecis 属：11種．すべて同国初記録．*H. stueningi* SATO, *H. moriutii* SATO を新種として記載した．

Cleora 属：14種．うち7種が初記録．*C. venustaria thaiensis* SATO を新亜種として記載した．

Alcis 属：9種．すべて初記録．*A. chiangmaiensis* SATO を新種として記載した．

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